

E-Cigarette, or Vaping, Product Use Associated Lung Injury (EVALI)

Interim Diagnostic and Therapeutic Guidance

History and Physical

Symptoms:

- Cough, dyspnea, pleuritic chest pain
- Nausea, vomiting, diarrhea
- Headache, fatigue, weight loss

Physical Exam Findings:

- Hypoxemia, fever, tachypnea

Positive Screen for Vaping-specific History:

- E-cigarette (“vaping”) or “dabbing” (inhaling concentrated liquid) within 30 days
- Most cases involve use in days to weeks preceding presentation. CDC case definition includes vaping use in prior 90 days

AND

Obtain Chest Imaging

Chest X-ray:

- Diffuse bilateral infiltrates/disease

Chest CT:

- Nonspecific bilateral ground glass opacities +/- sub-pleural sparing
- Acute eosinophilic pneumonia, diffuse alveolar damage, organizing pneumonia, or lipid pneumonia
- Diffuse lung nodules

If history, physical, and/or chest imaging not suggestive consider alternative diagnoses

If atypical presentation:

- Repeat imaging
- Close follow-up (within 48 hours)

Obtain Lab Data to Screen for Alternate Diagnoses

Cardiac, Rheumatologic, Neoplastic Testing (at clinical discretion):

- CBC with differential
- ESR, CRP, LDH
- CMP (i.e., BMP + LFTs)
- Urinalysis
- ECG

Infectious Testing:

- Blood cultures
- Extended viral panel including influenza testing
- Mycoplasma NAAT
- Strep. Pneumo urinary Ag
- Legionella Ag
- HIV testing

Consider alternative diagnoses

Or

Consider an EVALI– concomitant respiratory infection

No alternative diagnoses

EVALI Clinical Management:

If EVALI is suspected, clinical management should proceed immediately and be further guided by individual laboratory results:

- Early pulmonology and toxicology consultation, including screening for urine THC
- Oxygen and respiratory/ventilatory support as required
- Empiric antibiotic coverage for at least 48 hours if history is unclear, if patient is intubated, or patient has severe hypoxemia despite supplemental oxygen
- During influenza season, antivirals should be considered until influenza is excluded
- Systemic steroids if no improvement with antibiotics and/or respiratory support
- Corticosteroid dosing and duration should be considered on a case by case basis
- Length of steroid taper should be made based on patient’s clinical course of recovery and close follow up
- Arrange for outpatient follow up with primary care team and/or pulmonary team
- Report to local Poison Control Center for case surveillance
- Collect vaping cartridges for state public health lab testing
- Advise patient against all vaping, refer for smoking cessation, as appropriate

If bronchoscopy performed: (consider in intubated patients or at the discretion of treatment team)

- Lipid staining of samples
- Oil-red O stain
- Total cell count with differential
- Bacterial and fungal cultures
- Gram stains and smears
- Medical cytology
- Fungal stains
- Additional testing as clinically indicated